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## Diffuse Large B-cell lymphoma of mandible: A case report

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### Abstract

Non-Hodgkin's lymphomas are a group of neoplasms that originate from the cells of the lymphoreticular system. Forty percent of non-Hodgkin's lymphomas arise from extra nodal sites. Non-Hodgkin's lymphomas detected primarily in the bone are quite rare, but among jaw lesions, they are more frequently present in the maxilla than in the mandible. There are no classical characteristic clinical features of lymphomas involving the jaw bones. Swelling, ulcer or discomfort may be present in the region of the lymphoma, or it may mimic a periapical pathology or a benign condition.

Though non-Hodgkin's lymphomas have been reported in all age groups, they generally affect the elderly, particularly males. Primary non-Hodgkin's lymphomas of the bone can be effectively managed by chemotherapy, with or without radiotherapy. We report a case of a large B-cell lymphoma of the mandible, in which the patient presented with a diffuse swelling on the right body of the mandible. A subsequent biopsy and immunohistochemistry were instrumental in this diagnosis. After finding no metastasis to other sites, the patient was treated with chemotherapy. The swelling regressed completely following the chemotherapy regimen, with no sign of recurrence observed over the last eighteen months.

**Key words:** Mandibular swelling, case report, non-Hodgkin's lymphoma, CHOP therapy.

### Introduction

Lymphomas are a diverse group of neoplasm's affecting the lympho reticular system. Lymphomas have been traditionally divided into Hodgkin's disease and non Hodgkin's disease. Hodgkin's disease often presents as nodal disease, commonly involving cervical, axillary and inguinal nodes. Whereas non Hodgkin's disease may develop extra-nodally, outside the lymphoid system and can occur in stomach, salivary glands and rarely in oral cavity and jaws (1). Among the jaw le-

sions, maxilla is more frequently involved than mandible (2,3). This case report describes about primary non-Hodgkin's lymphoma involving the mandible.

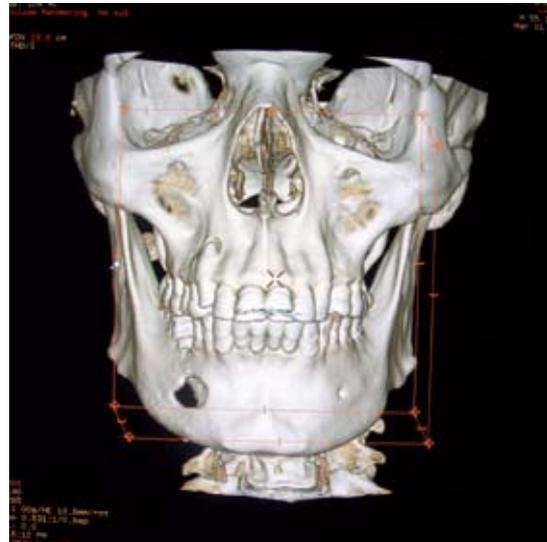
### Case Report

A 55 year old male presented to the Department of Oral Medicine & Radiology with a complaint of painless swelling in the right body of mandible since 4 months. The swelling was insidious in onset and gradually increased in size. There was asymmetry of face due to the

swelling; there was no altered sensation over chin region. He had undergone uneventful extraction of lower right first molar about 6 months back. His medical history and family history were not contributory.

On inspection a solitary diffused swelling was evident in right body of mandible, measuring 3.5×3.5 cm in size. Overlying skin appeared slightly stretched. On palpation there was no local raise in temperature and the swelling was non tender. It was firm to hard in consistency and the surface was smooth. Overlying skin was easily pinch able.

On intra oral examination the swelling extended from 44 to 48 region obliterating the buccal vestibule. Buccal cortical plate was expanded whereas lingual plate appeared normal. The teeth in the region (44-45,47-48) were not mobile and were vital. 46 was missing with healed and smooth alveolar mucosa. A provisional diagnosis of residual cyst was made.



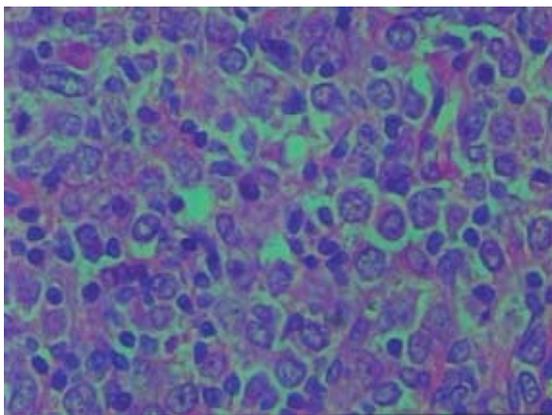
**Fig. 3.** 3-D reconstruction showing break in Outer cortical bone of mandible.



**Fig. 1.** Pre-treatment extra oral photograph-Frontal view.



**Fig. 4.** CT- scan showing perforation of buccal and lingual cortical plate.



**Fig. 2.** 1000x view showing large lymphoid cells with high N:C ratio.



**Fig. 5.** Post treatment photograph – Frontal view.

Intra oral radiograph and OPG revealed a lytic lesion in right body below the apex of 45 not contacting the root. Otherwise his skeletal survey was normal. Incisional biopsy was carried out after doing routine blood investigations. Biopsy specimen revealed sheets of abnormally large lymphoid cells with high Nucleus: Cytoplasmic ratio, coarse chromatin and inconspicuous nucleoli with abnormal mitotic figures. The features were suggestive of large cell lymphoma. Then immunohistochemistry was undertaken which was positive for CD45 & CD20 and negative for CD3, which proved conclusively the lesion to be as a B-cell lymphoma.

CT scan of mandible revealed break in cortical plate both on buccal & lingual side. Chest X-ray, ultra sound of abdomen, bone scan and bone marrow biopsy did not reveal any abnormality and confirmed the lesion to be localized.

Chemotherapy was advised by the oncologist and a total of 6 cycles were suggested at the gap of every 3 weeks. The treatment regimen followed was that of classical CHOP therapy which comprised of using Cyclophosphamide, doxorubicin (Hydrodoxorubicin), vincristine (Oncovin) and Prednisolone. At the end of 2 cycles the swelling started regressing in size and totally disappeared after 4 cycles.

Patient is examined periodically once in two months since then. It's been one and a half years now, he is healthy and disease free.

## Discussion

Malignant lymphomas constitute a group of neoplastic proliferation process of the lymphocytes & their precursor cells. Hodgkin's disease is characterized histologically by presence of multi-nucleated Reed-Sternberg cells. All other neoplasms of lymphoid system are referred to as Non-Hodgkin's lymphoma (NHL) and are derived predominantly from the cells of B- lymphocyte series (4,5).

NHL presents up to 40% of the time at an extra nodal site. Moreover, 2-3% of these extra nodal cases may arise primarily in the oral cavity and jaws. It is generally accepted that the most common site of NHL in oro-facial region is Waldeyr's ring (6). Jaw involvement by NHL is rare, but among jaw lesions, maxilla is more frequently involved than mandible (7,8).

Primary lymphoma of the bone was first described by Parker and Jackson as primary reticular cell sarcoma of bone (9). There are no characteristic clinical features when jaw bones are involved, they can present as swelling of the jaw, pain, numbness, tooth mobility or cervical lymphadenopathy (10,11).

Lymphomas show a male predominance with male to female ratio 3:2. The average age of presentation is 50-55 years. Radiographic signs of bone involvement may be absent in 10-20% of cases and the radiographic find-

ings may not be specific. There can be diffuse bone destruction, appearing as a solitary defect or lowering of alveolar bone margin resembling periodontitis (2,12).

NHL can be managed by chemotherapy, radiotherapy and surgery in various combinations. NHL arising in bone is best treated by chemotherapy and may not require radiotherapy. Survival is excellent in localized disease, whereas disseminated disease seems less favorable (13-15).

Though lymphoma of mandible is rare, it must be considered in differential diagnosis of swellings arising in that region. Prognosis is excellent in localized disease, whereas in disseminated disease it is less favorable. Lymphomas arising in bone may be effectively managed by chemotherapy alone. Thus with the rising incidence of extra-nodal lymphomas it has become very important for present age dentists to not take any swellings of the orofacial region at face value but to properly investigate its pathology and treat it judiciously.

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*Note:* Tooth numbering system used here is the FDI two digit notation system.